



HIP
AZOTARA

COMPANY FOR THE PRODUCTION OF FERTILIZERS AND NITROGEN COMPOUNDS

"HIP-AZOTARA" d.o.o. Pančevo

SAFETY DATA SHEET

In accordance with Regulation EC 1907/2006 (REACH)

Compiled on: 9.12.2010.

Revised on: 22.02.2016

Replaces the previous version of the safety data sheet starting from: 22.02.2016.

Version No: 1

Rev. No: 7 this revised version replaces all the previous versions

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/ MIXTURE AND OF THE COMPANY/UNDERTAKING

Subsection 1.1. Product identifier:	CARBAMIDE (UREA) 46%N 57-13-6
Subsection 1.2. Relevant identified uses of the substance or mixture, and uses advised against:	<p>In agriculture it is used as fertilizer. In the metal industry carbamide (urea) derivatives, mixed with other chemicals, are used as corrosion inhibitors.</p> <p>Carbamide (urea) is widely used in the fields of medicine and stomatology due to its strong bacteriostatic, bactericidal, fungicidal and antiseptic effects on gram-positive and gram-negative microorganisms. It is also used as supplement in ruminant feed. It can be used in industry in the production of melamine, cyanuric acid, urea-formaldehyde resins and medicaments. It is also used as a component in cosmetic products.</p>
Subsection 1.3. Details of the Supplier: Manufacturer/Supplier: a) Status: b) Street address and telephone number: c) e-mail address of competent person responsible for the safety data sheet: d) only representative in the EU:	<p>"HIP-AZOTARA" d.o.o. Pančevo Manufacturer/Producer</p> <p>Spoljnostarčevačka 80, 26000 Pančevo, The Republic of Serbia +381 13 308067; 7-15 h (Environmental Protection Department) +381 13 308052, 308057; 7-15 h (Sales Department)</p> <p>gordana.vasojevic@hip-azotara.rs ekologija.info@hip-azotara.rs</p> <p>BENS consulting d.o.o. Address: Bakovniška 7, 1241 Kamnik, Slovenia Tel.: +386 1 562 19 20 e-mail: info@kemikalije.com Contact person in EU: Mark Stanojevic</p>
Subsection 1.4. Single European emergency call number:	112
Supplier:	+386 1 562 19 20

SECTION 2. HAZARDS IDENTIFICATION

Subsection 2.1. Classification of the substance or mixture:

Classification according to Reg. 1272/2008:

Urea is NOT classified as hazardous

Subsection 2.2. Label elements:

Urea has no hazardous properties-label elements are not applicable

Subsection 2.3. Other hazards:

a) persistent- bioaccumulative-toxic/very persistent-very bioaccumulative

- The substance is not classified as PBT, or as vPvB.

b) information on other harmful effects on human health

- When heated, urea decomposes and forms toxic vapours containing ammonia and nitrogen oxides.

c) information on environmental effects:

- If applied properly, the fertilizer has no adverse environmental effects.

SECTION 3. INFORMATION ON INGREDIENTS

Subsection 3.1. Information on the ingredients of the substance:

<i>Chemical name</i>	Urea	Biuret	Water
<i>Chemical formula</i>	CH ₄ N ₂ O	C ₂ H ₅ N ₃ O ₂	H ₂ O
<i>Index number</i>	/	/	/
<i>EC number*</i>	200-315-5	203-559-0	/
<i>CAS number</i>	57-13-6	108-19-0	7732-18-5
<i>REACH number</i>	01-2119463277-33-0138		
<i>Concentration</i>	≥98.7%	≤0.9%	≤0.3%

0.1% are substances enhancing the quality of the product

*EU inventory: the component is listed on the European Inventory of Existing Chemical Substances – EINECS

SECTION 4. FIRST AID MEASURES

<p>Subsection 4.1. Description of first aid measures:</p> <ul style="list-style-type: none"> - following inhalation: - following skin contact: - following eye contact: - following ingestion: - advice: 	<p>Move away from the source of dust. Obtain medical attention.</p> <p>Wash affected areas with soap and water.</p> <p>Flush eyes with fresh water. Hold the eyelids apart with clean fingers and roll the eyes so that water could reach all the parts of the eye. Obtain medical attention if eye irritation persists.</p> <p>Do not induce vomiting. Obtain medical attention in case of ingestion of larger quantities.</p> <p>The rescuer must be adequately equipped with a facemask and dust filter. Give immediate first aid, obtain medical attention and fully inform the physician about the details of the accident. In addition to the facemask, the rescuer must wear protective gloves (rubber gloves), protective clothing, suitable boots and safety goggles.</p>
<p>Subsection 4.2. Most important symptoms and effects, both acute and delayed:</p>	<p>The most important symptoms <u>following inhalation</u> are: slight irritation in form of cough. <u>Following ingestion</u> of urea prills may cause nausea and vomiting. Following the contact with <u>skin</u> may cause slight irritation including redness. In contact with <u>eyes</u> causes lacrimation.</p> <p>Urea also has slight delayed effects on human organism.</p>
<p>Subsection 4.3. Indication of any immediate medical attention and special treatment needed:</p>	<p>Obtain medical attention if any of the above symptoms occur.</p>

SECTION 5. FIREFIGHTING MEASURES

<p>Subsection 5.1. Extinguishing media:</p>	<p>Urea is not flammable; however, if it is caught by fire, use water for extinction. Also, consider the flammability of materials that are found in the vicinity and the suitable extinguishing media for those materials.</p>
<p>Subsection 5.2. Special hazards arising from the substance or mixture:</p>	<p>Urea is not flammable, but melts at higher temperatures. Melting starts at temperatures above 134°C and ammonia gas is formed. Mixing of urea with nitric acid in the event of fire produces urea nitrate, which has explosive properties.</p> <p>Fire may be caused by: non-compliance with the instructions for use, not following the operating instructions (negligence, carelessness, lack of knowledge).</p>
<p>Subsection 5.3. Advice for firefighters:</p>	<p>Firefighters must be protected by wearing suitable protective clothing and self-contained breathing apparatus. They must also be trained for carrying and properly using the equipment.</p>

SECTION 6. ACCIDENTAL RELEASE MEASURES

Subsection 6.1. Personal precautions, protective equipment and emergency procedures:	Use personal protective equipment. For information on protective equipment see <i>Subsection 8.2. Exposure controls and personal protection</i> . Avoid contact with eyes and skin.
Subsection 6.2. Environmental precautions:	Avoid contamination of watercourses and drains. Inform appropriate authorities in case of accidental contamination of watercourses or drains.
Subsection 6.3. Methods and material for containment and cleaning up:	<p>In case of small spills, rinse with large amounts of water. Wastewaters must be adequately treated. Large spills should be contained using sand or earth, as appropriate.</p> <p>Inform appropriate authorities in case of accidental contamination of watercourses or drains.</p>
Subsection 6.4. Reference to other sections:	See <i>Subsection 8.2. Exposure controls and personal protection</i> for information on protective equipment. For information on waste treatment see <i>Section 13. Disposal considerations</i> .

SECTION 7. HANDLING AND STORAGE

Subsection 7.1. Precautions for safe handling:	<p><u>Information on safe handling of the chemical substance:</u></p> <ul style="list-style-type: none">- follow the operating instructions;- wear full protective equipment;- avoid skin and eye contact and inhalation of vapours;- provide adequate ventilation. <p><u>Handling of incompatible chemical substances or mixtures:</u></p> <ul style="list-style-type: none">- Avoid generation of dust. <p><u>Information on handling in case of release of the chemical substance to the environment:</u></p> <ul style="list-style-type: none">- control atmospheric levels for compliance with occupational exposure limits;- personal protective equipment and firefighting equipment should always be at hand;- clean up the location as quickly as possible and notify emergency response personnel. <p><u>General occupational hygiene:</u></p> <ul style="list-style-type: none">- do not eat, drink or smoke in work areas;- wash hands after use;- remove contaminated clothing and protective equipment
Subsection 7.2. Conditions for safe storage, including any incompatibilities:	<p><u>Technical conditions:</u></p> <p>The storage area must be dry and well-ventilated. The stored product must not be directly exposed to sunlight in order to avoid physical damage due to thermal decomposition. The recommended storage temperature is below 50°C.</p>

	<p><u>Storage conditions:</u> The storage area must be dry and well-ventilated. The stored product must not be directly exposed to sunlight in order to avoid physical damage due to thermal decomposition. Do not permit smoking in the storage area. The height of the stack of bags depends on the type of packaging:</p> <ul style="list-style-type: none"> - For products in 50 kg bags - up to 2 metres - For products on pallets - 2 pallets in stack - For products in big bags IBC (500 kg) - 3 layers in a vertical stack - For products in big bags IBC (1000 kg) - 2 layers in a vertical stack <p>The distance between the top of the stack and the ceiling, the roof construction and the source of light or electrical devices must be 1 m.</p> <p><u>Storage in bulk:</u></p> <p>The product in bulk should be stored indoors, in dry and ventilated areas, and the warehouse floor and the pile of stored product should be covered with PE or PE/PP film. In case that different types of fertilizers or materials other than fertilizers are stored in the same building, take care to separate them properly in order to avoid contamination. Pay particular attention to their compatibility, including the case of fire. Do not store urea together with ammonium nitrate-based fertilizers (CAN and SAN).</p> <p><u>Reactions of carbamide (urea) with construction materials:</u> Appropriate packing materials for urea are polyethylene (PE) or polypropylene (PP) bags.</p> <p><u>Electrical equipment:</u> suitable electrical installation is required.</p>
<p>Subsection 7.3. Specific end use(s):</p>	<p>Professional use only, in accordance with the prescribed operating instructions.</p>

SECTION 8. EXPOSURE CONTROLS

Subsection 8.1. Control parameters:

No occupational exposure limits have been established for urea. The main possible hazard associated with exposure to UREA fertilizer refers to irritating dust. Maximum threshold limit value for exposure to irritating dust is 10 mg/m³ according to the Regulation on preventive measures for safe and healthy work when exposed to chemicals (The Official Gazette of the RS 106/2009).

Derived no-effect level (DNEL):

Name of the substance	Population likely to be exposed	Route of exposure	Frequency and duration of the exposure	Value
Urea 57-13-6	workers	inhalation	Long-term exposure	292 mg/m ³
Urea 57-13-6	workers	dermal	Long-term exposure	580 mg/kg bw/day
Urea 57-13-6	consumers	inhalation	Long-term exposure	125 mg/m ³
Urea 57-13-6	consumers	dermal	Long-term exposure	580 mg/kg bw/day
Urea 57-13-6	consumers	oral	Long-term exposure	42 mg/kg bw/day

Predicted no-effect concentration (PNEC):

Name of the substance	Compartment	Value
Urea 57-13-6	Fresh water	0.47 mg/l

Subsection 8.2. Exposure controls and personal protection:

Appropriate engineering controls:

- provide ventilation in work area,
- eyewash stations with fresh water are required (these places must be clearly marked),
- avoid contact with skin,
- avoid inhalation.

Personal protection:

Eye/face protection: Safety glasses/face-shield(EN 166)

Skin protection: Wear overalls (EN ISO 13688) and suitable boots (EN ISO 20345). In case of accident wear special chemical-resistant overall (EN ISO 13982). Protective gloves (rubber gloves) (EN 374).

Respiratory protection: In case of high dust concentrations use facemask (EN 136) respirator type P (EN 149).

Environmental Exposure Controls:

Environment exposure control should be performed in accordance with the applicable regulations.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Subsection 9.1.

Information on basic physical and chemical properties:

a) appearance-physical state and colour:	White, solid prills.
b) odour:	Odourless
c) odour threshold:	Data not available
d) pH:	Not determined if the substance is in solid physical state
e) melting point/freezing point:	134°C (1013 hPa)
f) initial boiling point and boiling range:	The substance decomposes before it reaches the boiling point
g) flash point:	Data not available
h) evaporation rate:	The study scientifically unjustified
i) flammability:	Not flammable
j) upper/lower flammability or explosive limits:	Not flammable and not classified as explosive
k) vapour pressure:	0.002 Pa at 298 K
l) vapour density:	Not determined as the substance is in solid physical state
m) relative density:	1.33 g/cm ³
n) solubility:	Water-soluble 624g/l
o) partition coefficient: n-octanol/water:	-1.73 logPow
p) auto-ignition temperature:	Not auto-ignitable within the temperature range below the melting point
q) decomposition temperature:	134°C
r) viscosity:	Not determined for substances in solid physical state
s) explosive properties:	No explosive properties
t) oxidising properties:	No oxidising properties
Subsection 9.2. Other information:	Urea is hygroscopic.

SECTION 10. REACTIVITY AND STABILITY

Subsection 10.1. Reactivity:	Urea is not flammable or explosive.
Subsection 10.2. Chemical stability:	The product is stable under the recommended storage conditions (see section 7.2. <i>Conditions for safe storage, including any incompatibilities</i>)
Subsection 10.3. Possibility of hazardous reactions:	Fire and explosion hazard as it reacts with strong oxidising materials, nitrites and chlorides. It may form flammable mixtures with nitric acid, perchloric acid and nitrates.
Subsection 10.4. Conditions to avoid:	Stable within the limits of the designed conditions of use and storage. Avoid preheating of the product and contact with incompatible materials.
Subsection 10.5. Incompatible materials:	Strong oxidizing agents, nitrites, inorganic chlorides, chlorites, perchlorates as there is a possibility of violent reaction, fire or explosion. Nitric acid, perchloric acid and nitrates because of the formation of spontaneously flammable mixtures.
Subsection 10.6. Hazardous decomposition products:	Ammonia vapours are formed

SECTION 11. TOXICOLOGICAL INFORMATION

Subsection 11.1. Information on toxicological effects:	
a) acute toxicity:	-oral (<i>LD 50</i>): 14 300 mg/kg (mouse)
b) skin corrosion/irritation:	Urea does not cause skin irritation
c) serious eye damage/irritation:	Urea does not cause eye irritation
d) respiratory or skin sensitization:	Available data insufficient for classification of urea as respiratory tract and skin sensitizer
e) germ cell mutagenicity:	The substance is not classified as mutagenic
f) carcinogenicity:	The substance is not classified as carcinogenic
g) reproductive toxicity:	The substance is not classified as toxic to reproduction
h) specific target organ toxicity –single exposure and repeated exposure:	Available data insufficient for classification
i) aspiration hazard:	Available data insufficient for classification
Subsection 11.2. Information on likely routes of exposure:	<ul style="list-style-type: none"> - skin exposure: slight skin irritation - eye exposure: lacrimation - peroral: nose and throat irritation

Subsection 11.3. Symptoms related to the physical, chemical and toxicological characteristics:	See <i>Subsection 4.2. Most important symptoms and effects, both acute and delayed</i>
Subsection 11.4. Delayed and immediate effects, as well as chronic effects from short and long term exposure:	See <i>Subsection 4.2. Most important symptoms and effects, both acute and delayed</i>
Subsection 11.5. Interactive effects:	Data not available
Subsection 11.6. Absence of specific data:	All the available and relevant data are shown
Subsection 11.7. Other information:	All the available and relevant data are shown

SECTION 12. ECOLOGICAL INFORMATION

Subsection 12.1. Toxicity: <u>-aquatic organisms:</u>	<u>fish:</u> * LC ₅₀ =6 810 mg/l, 96h (Leuciscus idus) <u>daphnia:</u> * LC ₅₀ =10 000 mg/l, 24h -(Daphnia magna)
<u>-soil organisms:</u>	Data not available
<u>-plants and terrestrial organisms:</u>	Toxicity to terrestrial plants is not anticipated
Subsection 12.2. Persistence and degradability: <u>-biodegradation:</u>	Urea is biodegradable, in water and soil, into ammonia and bicarbonates. The main degradation mechanism is enzymatic mineralization.
<u>-other processes of degradation:</u>	Urea is easily degradable in water, which means that it is biodegradable and not persistent, and therefore has no bioaccumulative potential.
<u>-degradation in wastewaters:</u>	Urea is degradable in water.
Subsection 12.3. Bioaccumulative potential:	The substance has no potential for bioaccumulation.
Subsection 12.4. Mobility in soil:	Urea is adsorbed by soil. Adsorption coefficient is 0.037 to 0.064.
Subsection 12.5. Results of PBT and vPvB assessment:	The substance is not classified as PBT, or as vPvB.
Subsection 12.6. Other adverse effects:	All the available and relevant data on adverse effects are shown.

SECTION 13. DISPOSAL CONSIDERATIONS

Subsection 13.1. Waste treatment methods:	Waste generation should be prevented or reduced to minimum wherever possible. Disposal of this product, its solutions and any by-products must always be performed in accordance with the laws on environmental protection, laws on waste management and all the local requirements. Packaging waste should be recycled.
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SECTION 14. TRANSPORT INFORMATION

Subsection 14.1. Transport information:	Not classified, considered a non-hazardous material as per the international transport codes, i.e. ADR / RID / AND / IMDGA / ICAO.
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SECTION 15. REGULATORY INFORMATION

Subsection 15.1. Safety, health and environmental regulations:	- Regulation EC 1272/2008 (CLP)- Regulation EC 1907/2006 (REACH)
Subsection 15.2. Chemical safety assessment:	Chemical safety assessment performed for urea and the relevant Chemical Safety Report (CSR) has been prepared. The relevant information is contained in the sections of the present safety data sheet as well.

SECTION 16. OTHER INFORMATION

Subsection 16.1. Indication on changes:	This safety data sheet has been significantly changed and amended in terms of form and contents in accordance with regulations
Subsection 16.2. List of abbreviations and acronyms:	ADNR European Agreement concerning the International Carriage of Dangerous Goods by inland Waterways ADR European Agreement concerning the International Carriage of Dangerous Goods by Road CAS Chemical Abstract Service CSR Chemical safety report DNEL Derived No Effect Levels EC no EC number, European Commission number ECHA European Chemicals Agency EC₅₀ half maximal effective concentration IUCLID International Uniform Chemical Information Database IMDG International Maritime Dangerous Goods ICAO International Civil Aviation Organization LC₅₀ Lethal concentration 50% LD₅₀ Lethal Dose 50% MAC Maximum allowable concentration

	<p>NOAEL No Observed Adverse Effect Level NOEC No Observed Effect Concentracion OSHA Occupational Safety and Health Administration PBT Persistence Bioaccumulation potential and Toxicity PNEC Predicted No Effect Concentration ppm parts per million RID International Rule for Transport of Dangerous Substances by Railway REACH Regulation (EC) no.1907/2006 concerning the registration, evaluation and authorisation of chemicals STEL Short-Term Exposure Limit TWA Time Weighted Averages vPvB Very persistent and very bioaccumulative</p>
Subsection 16.3. Literature references and sources of data:	<p>/ ECHA-European Chemicals Agency/ /source: „IUCLID Dataset“ European Chemicals Bureau/ /OECD Existing Chemicals Database / / Regulation on preventive measures for safe and healthy work when exposed to chemicals (The Off. Gaz. of the RS 106/2009)/ / Transport regulations according to ADR, RID, IMDG and ADN including the amendments / / Occupational Medicine, prof.dr.Mirjana Arandelović and prof.dr.Jovica Jovanović, Faculty of medicine, University of Niš, 2009/</p>
Subsection 16.4. List of relevant hazard statements and precautionary statements:	<p>Urea has no hazardous properties-risk phrases, hazard statements, safety phrases and precautionary statements are not applicable.</p>
Subsection 16.5. Advice on appropriate training for employees:	<p>Act in accordance with the applicable regulations regarding the occupational safety and health.</p>

The information indicated is based on the knowledge and experience up to the date of the compilation of the Safety Data Sheet. The purpose of this Safety Data Sheet is to highlight the precautionary and safety measures regarding this product.

"HIP-AZOTARA" d.o.o. Pančevo does not assume any responsibility for the information out of the scope of what is written here. The Safety Data Sheet shall not by any means be considered a guarantee for the composition, properties, effects and use of the product for certain purposes.

It is the responsibility of the user to inspect and examine the product in order to verify personally whether the product is suitable for a particular purpose. Furthermore, the user is responsible for handling, storage and use of this product in accordance with the applicable laws and regulations ensuring the occupational safety and health and environmental protection.

The information in this Safety Data Sheet refers exclusively to our products, and on condition that the products are not used together with the third parties' materials.